CLAIMS

1. A support table structure comprising:

a support table, for supporting a workpiece thereon to subject the workpiece to a predetermined thermal process in a processing vessel, provided with a heating means for heating the workpiece; and

a support post standing on the bottom of the processing vessel and supporting the support table;

characterized by a heat-resistant upper surface covering member, a heat-resistant side surface covering member and a heat-resistant lower surface covering member respectively covering the upper, the side and the lower surface of the support table.

2. A support table structure comprising:

a support table, for supporting a workpiece thereon to subject the workpiece to a predetermined thermal process in a processing vessel, provided with a heating means for heating the workpiece; and

a support post standing on the bottom of the processing vessel and supporting the support table;

characterized by a heat-resistant, opaque back cover disposed under the lower surface of the support table.

3. The support table structure according to claim 2, wherein the upper and the side surface of the support table and the lower surface of the opaque back cover are covered with upper, side and lower surface covering members, respectively.

4. The support table structure according to claim 1 or 3, wherein the upper surface covering member has a diameter substantially equal to that of the support table, a raised part is formed on the upper surface of the upper surface covering member, and a recess for receiving the workpiece is formed in the raised part.

5. The support table structure according to any one of claims 1, 3 and 4, wherein the upper surface of a peripheral part of the upper surface covering member is contiguously covered with a part of the side surface covering member.

6. The support table structure according to any one of claims 1 to 5, wherein the side surface of the support table is covered with an opaque covering member made of opaque quartz glass.

7. The support table structure according to claim 3, wherein a space is formed between the opaque back cover and the lower surface covering member.

8. The support table structure according to claim 7, wherein projections project from the lower surface of the opaque back cover to define the space between the opaque back cover and the lower surface covering member.

9. A support table structure comprising:

a support table for supporting a workpiece thereon to subject the workpiece to a predetermined thermal process in a processing vessel; and

a support post standing on the bottom of the processing vessel and supporting the support table;

characterized in that the support table and the support post are made of quartz glass, and a heating means is embedded in the support table.

10. The support table structure according to claim 9, wherein the support post has a cylindrical shape, and power supply lines for supplying power to the heating means are passed through a central part of the support table and are extended through the cylindrical support post.

11. The support table structure according to claim 10, wherein the support table is built by bonding together a top plate, a middle plate and a bottom plate, wiring grooves for holding the heating means are formed in either the lower surface of the top plate or the upper surface of the middle plate, and a wiring groove for holding the power supply lines connected to the heating means is formed in either the lower surface of the middle plate or the upper surface of the bottom plate.

12. The support table structure according to any one of claims 9 to 11, wherein the upper surface of the support table is

covered with an opaque temperature-equalizing plate.

13. The support table structure according to any one of claims 9 to 12, wherein the support table is provided with a purging gas supply pore to supply a purging gas over the upper surface of the support table, and a gas supply quartz pipe is connected to the purging gas supply pore.

14. The support table structure according to claim 13, wherein the gas supply quartz pipe is extended outside the support post and has upper and lower ends welded to the support table and the support post, respectively.

15. The support table structure according to any one of claims 9 to 14, wherein the quartz glass is transparent.

16. The support table structure according to any one of claims 9 to 15, wherein a heat-resistant, opaque back cover is disposed under the lower surface of the support table.

17. The support table structure according to any one of claims 9 to 16, wherein the upper, the side and the lower surface of the support table are covered with upper, side and lower surface covering members, respectively.

18. The support table structure according to any one of claims 9 to 17, wherein the support post is stood up on a cushioning member to prevent the breakage of the support post.

19. The support table structure according to any one of claims 2, 3, 7, 8 and 16, wherein the opaque back cover is made of opaque quartz glass.

20. The support table structure according to any one of claims 1 to 18, wherein the side surface of the support post is covered with a heat-resistant support post covering member.

21. The support table structure according to claim 20, wherein the upper, the side and the lower surface covering member and the support post covering member constitute a cover assembly, the lower surface covering member and the support post covering member are formed integrally in a single member, and the cover assembly can be assembled and disassembled.

22. The support table structure according to any one of claims 3, 7, 8, 17 and 21, wherein the covering members excluding the upper surface covering member and the opaque back cover are made of transparent quartz glass, and the surfaces of the covering members made of transparent quartz glass are finished by a surface roughening process to prevent films deposited thereon from peeling off.

23. The support table structure according to any one of claims 1 to 18, wherein a sealing member is disposed near a lower joining part of the support post, and the sealing member is shielded from heat radiated by the support table by an opaque shielding member.

24. The support table structure according to claim 23, wherein the support post is made of an opaque material, the support post is internally provided with an opaque member to protect the sealing member disposed near the lower joining part of the support post from heat radiated by the support table.

25. A thermal processing system comprising:

a processing vessel capable of being evacuated;

the support table structure according to any one of claims 1 to 24; and

a gas supply system for supplying process gases into the processing vessel.

26. The thermal processing system according to claim 17, wherein the heating means for heating the support table is divided into inner and outer heating sections respectively corresponding to inner and outer zones in the support table.